

CLAIMS

1. A resource management apparatus for a cellular communication system; comprising
- 5 a resource controller operable to allocate a radio resource to a subscriber unit in response to an operator identity associated with a service of the subscriber unit,
- wherein the resource controller is operable to allocate a first radio resource resulting in a first quality of service if the operator corresponds to
- 10 a cellular communication system operator and a second radio resource resulting in a different quality of service if the operator identity corresponds to a Mobile Virtual Network Operator.
2. The resource management apparatus as claimed in claim 1 wherein
- 15 the cellular communication system has a common radio access network resource divided into a first partition for a first operator and a second partition for a second operator, and the resource controller is operable to allocate resource from the first partition if the operator identity corresponds to the first operator and from the second partition if the
- 20 operator identity corresponds to the second operator.
3. The resource management apparatus as claimed in claim 2, wherein the resource management controller comprises:
- control means for independently controlling at least one quality of
- 25 service parameter associated with the first partition of the common radio access network resource in response to a first preference parameter of the first operator, and at least one quality of service parameter associated with the second partition of the common radio access network resource in response to a second preference parameter of the second operator.
- 30

4. The resource management apparatus as claimed in claim 3 wherein the at least one quality of service parameter comprises at least one radio access network parameter chosen from the group of:

- a) a call blocking rate;
- 5 b) a call drop rate;
- c) an error rate;
- d) a delay;
- e) a throughput fairness; and
- 10 f) a power control target.

5. The resource management apparatus as claimed in claim 3 or 4, wherein the control means comprise a first quality of service controller for independently controlling the at least one quality of service parameter associated with the first partition and a second quality of service controller
15 for independently controlling the at least one quality of service parameter associated with the second partition.

6. The resource management apparatus as claimed in claim 5 wherein the first quality of service controller comprises first input means for
20 receiving control input from the first operator and the second quality of service controller comprises second input means for receiving control input from the second operator.

7. The resource management apparatus as claimed in claim 6 wherein
25 each of the first and second quality of service controllers has an individually associated operations and maintenance controller.

8. The resource management apparatus as claimed in claim 5 to 7 wherein the first quality of service controller comprises a first resource
30 allocator for allocating resource associated with the first partition and the second quality of service controller comprises a second resource allocator for allocating resource associated with the second partition.

9. The resource management apparatus as claimed in claim 8 wherein the first and second resource allocators comprise a traffic scheduler.
- 5 10. The resource management apparatus as claimed in claim 8 wherein the first and second resource allocators comprise admission controllers.
11. The resource management apparatus as claimed in claim 5 to 10 wherein the first quality of service controller comprises a first power
10 control controller for controlling transmit powers associated with the first partition and the second quality of service controller comprises a second power control controller for controlling transmit powers associated with the second partition.
- 15 12. The resource management apparatus as claimed in claim 3 to 11 wherein the control means is operable to control the at least one quality of service parameter associated with the first partition and the at least one quality of service parameter associated with the second partition in
20 response to at least one common parameter for the first and second partition.
13. The resource management apparatus as claimed in claim claimed in claim 12 wherein the at least one common parameter is a total resource usage for the first and second partition.
- 25 14. The resource management apparatus as claimed in any of the previous claims 2 to 13 wherein the partitioning of resource in said first and second partition is different in different regions.
- 30 15. The resource management apparatus as claimed in any of the previous claims 2 to 14 wherein the resource management apparatus

comprises means for dynamically varying the partitioning of resource into said first and second partition.

5 16. The resource management apparatus as claimed in claim 15 wherein the partitioning of resource into the first and second partition is in response to a resource usage in said first and second partition.

10 17. The resource management apparatus as claimed in any of the previous claims 2 to 16 wherein the resource management apparatus further comprises means for presenting relative usage levels of the first and second partition respectively.

15 18. The resource management apparatus as claimed in any of the previous claims 2 to 17 wherein both the first and second partition comprises resource associated with equipment shared between the first and second operator.

20 19. The resource management apparatus as claimed in any of the previous claims 1 to 18 wherein the radio resource comprises a frequency resource.

25 20. The resource management apparatus as claimed in any of the previous claims 1 to 19 wherein the radio resource comprises a code resource.

30 21. The resource management apparatus as claimed in any of the previous claims 1 to 20 wherein the radio resource comprises a power resource.

22. A cellular communication system comprising a resource management apparatus as claimed in any of the previous claims.

23. A cellular communication system as claimed in claim 22 further comprising means for associating the operator identity to a service of a subscriber unit when initiating the service.

5

24. A cellular communication system as claimed in claim 22 or 23 wherein a radio access network is shared between the different operators.

25. A method of resource management in a cellular communication system; comprising
10 allocating a radio resource to a subscriber unit in response to an operator identity associated with a service of the subscriber unit,
wherein the step of allocating comprises allocating a first radio resource resulting in a first quality of service if the operator corresponds to
15 a cellular communication system operator and a second radio resource resulting in a different quality of service if the operator identity corresponds to a Mobile Virtual Network Operator.

26. A method of resource management as claimed in claim 25 wherein
20 the cellular communication system has a common radio access network resource divided into a first partition for a first operator and a second partition for a second operator and the step of allocating a radio resource comprises allocating resource from the first partition if the operator identity corresponds to the first operator and from the second partition if
25 the operator identity corresponds to the second operator.

27. A method of resource management as claimed in claim 26 wherein the step of allocating a radio resource comprises independently controlling at least one quality of service parameter associated with the first partition
30 of the common radio access network resource in response to a first preference parameter of the first operator, and at least one quality of service parameter associated with the second partition of the common

radio access network resource in response to a second preference parameter of the second operator.